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Case Report

REPORT ON MORAXELLA BOVIS INFECTION IN CATTLE OF PRODDATUR REGION

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Abstract: The present study was aimed to identify the infectious agent involved in occular infection. A heifer was reported with severe lacrimal discharges, corneal ulceration, opacity and abscess to Department of veterinary clinical complex, college of veterinary science, proddatur. Lacrimal flushing's and corneal swabs were collected aseptically and the sample was subjected for isolation, identification and antimicrobial sensitivity test at Department of veterinary microbiology. Gram negative diplobacilli on gram staining, haemolytic colonies on blood agar, catalase and oxidase positive suggestive of *Moraxella bovis*. On ABST, *Moraxella bovis* was highly sensitive towards Doxycycline followed by oxytetracycline, amoxyclav, tetracycline and gentamycin.

Keywords: Moraxella bovis, pink eye, ABST.

Introduction

Infectious bovine keratoconjuctivitis is commonly known as "pink eye" or "New forest disease". It is a contagious ocular disease affecting the cattle, especially young ones throughout the world. Although many microbes were responsible for infection, Moraxella bovis (M. bovis) is the main causative agent of IBK [1,2]. Moraxella bovis, is a gram negative non motile, short plump bacilli usually occur in pairs. Factors such as occular irritants, infection with bovine herpes virus-I, Thelazia, and deficiency of vitamin –A predispose to infection [3]. The bacterium adheres to the cells via its fimbriae, pili proteins and produces β–haemolysin toxin which lyses the corneal epithelial cells [4]. Infected animals excrete the bacteria through ocular and nasal discharges which act as source of infection to other animals. The disease is transmitted through direct contact with infected animal, aerosols and by flies [5]. Disease is characterized by conjunctivitis, excessive lacrimation, followed by corneal ulceration, opacity, abscessation, and oedema and coning of cornea [6]. Economic losses in terms of agalactia, weight loss, blindness etc were reported.

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Materials and methods

Sterile corneal swabs and lacrimal secretions were collected aseptically, immediately inoculated in to BHI broth and incubated at 37^0 c for 24 hrs. After incubation, gram staining was done for morphological identification. Later, loopfull of inoculum was streaked on to 10% sheep blood agar, MCA agar and incubated at 37^0 c for 2 days. Biochemical tests like catalase and oxidase tests were carried out according to standard protocols [7]. Finally, ABST was carried out on Muller-Hinton agar using Kirby-Bauer disc diffusion method following standard protocol [8].

Results and discussion

Samples were collected aseptically and subjected to isolation and identification. The causative agent was identified based on gram staining, cultural and biochemical characteristics [9]. Gram negative pink color rods and cocci in pairs were observed on gram staining which was typical morphology of Moraxella sps **[Fig:2]**. Initially on blood agar, small round haemolytic colonies were observed, after 48hrs colonies become flattend, grey with increased zone of haemolysis **[Fig:3].** Gram negative pink color short plump rods in pairs, characteristic haemolytic colonies on blood agar, no growth on MCA agar and positive for catalase and oxidase tests **[Fig:4]** were suggestive for Moraxella bovis [6].

In the present study, *M.bovis* was highly sensitive towards doxycycline (Do_{30}), oxy-tetracycline(O_{30}), followed by amoxyclav(AMC_{30}), gentamycin (GEN 30) and ceftriaxone (CTR30) which was in accordance with previous reports except in case of pencillin (P_{10}) and streptomycin (S25) [10]. Jeyabal et., al (2013) in his studies reported that M.bovis was sensitive towards Oxt tetracycline followed by pencillin, gentamycin, neomycin and kanamycin and resistance towards streptomycin, but in the present study organism was sensitive towards streptomycin and resistant towards pencillin-G which was not in accordance with Jeybal et., al (2013) & Allen et., al (1995). In the present study the organism was highly resistant towards ampicillin (AMP_{10}), cefoxitin (CN_{30}), followed by pencillin (P_{10}), trimethoprim (TR_{30}), ciprofloxacin (CIP_{10}) and sulfamethizole (SM_{300}). The resistance to pencillin and other commonly employed drugs was mediated by antibiotic resistant genes which was developed due to indiscriminate use of antibiotics.

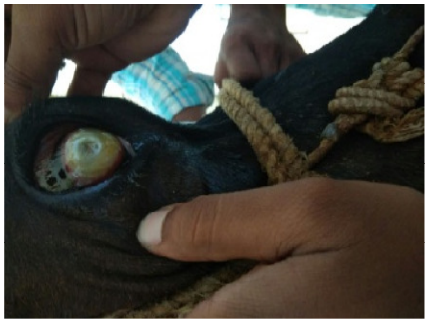

Fig 1: Thickyellowishdischarge and corneal depression.

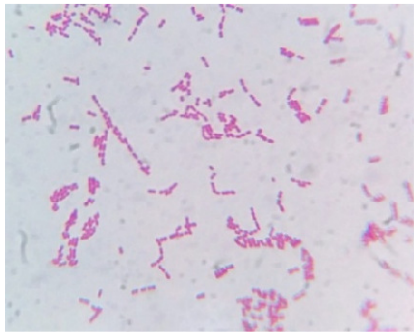

Fig 2: Pink color rods in pairs

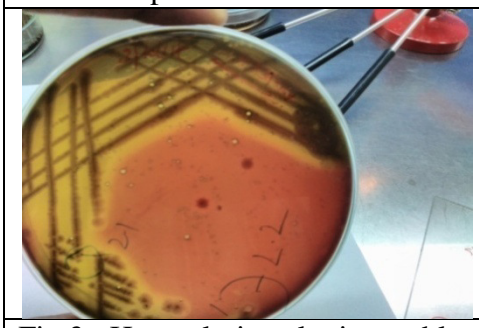

Fig 3: Haemolytic colonies on blood agar

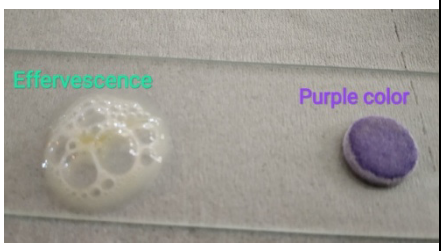

Fig 4: Catalase +ve, Oxidase +ve

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